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## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

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Ref: EPR-ER

NOV 29 2004

November 22, 2004

**ACTION MEMORANDUM AMENDMENT #2**

**SUBJECT:** Request for a second Amendment to the Time Critical Removal Action Memorandum for the Vermiculite Intermountain Site, Salt Lake City/County, Utah.

**FROM:** Floyd Nichols, On-Scene Coordinator  
Emergency Response Team

**THROUGH:** Paul Peronard, Acting Team Supervisor  
Emergency Response Unit

Douglas M. Skie, Director  
Preparedness, Assessment & Emergency Response Programs

**TO:** Max H. Dodson, Assistant Regional Administrator  
Office of Ecosystems Protection & Remediation

Site ID#: 08GA

Category of Removal: Time Critical, Fund-Lead

**I. PURPOSE**

The purpose of this ACTION MEMORANDUM AMENDMENT # 2 is to request an increase in the ceiling for the Removal Action at the Vermiculite Intermountain site (Site) located in Salt Lake City/County, Utah. The original Action Memorandum was signed on April 7, 2004, and included a 12-month & \$2 million exemption from the statutory limits (See Attachment A). The first Action Memorandum Amendment was signed on May 26, 2004 (See Attachment B).

In the process of finding and removing the Libby Amphibole (LA) (asbestos) contamination from the Site, the U.S. Environmental Protection Agency (EPA) Region VIII faced several problems, not the least of which was estimating the full extent of LA contamination at the site.



## II. SITE CONDITIONS AND BACKGROUND

The Site is located near 333 West 100 South, Salt Lake City, Utah. EPA conducted several sampling events at or around the Site and inside the buildings surrounding the Site during 2002 and 2003. Analysis of the samples showed the presence of Libby Amphibole (LA) asbestos fibers in significant concentrations in on- and off-Site soils and in dust collected from within various building interior work spaces and on equipment units inside buildings that are on and adjacent to the Site.

Original work projections for the Site included excavation and/or removal of approximately 3,900 cubic yards of LA-contaminated dust, soils, and miscellaneous debris from the Site and surrounding properties, including the Utah Power & Light (UPL) electrical substation parcel (including a small, 2-story storage/switch building), the Artistic Printing Company facility, and the Frank Edwards Building (See Attachment 1 - Action Memorandum dated April 7, 2004 for additional information). EPA, with the support and concurrence of the Utah Department of Environmental Quality (UDEQ), determined that imposition of institutional/engineering controls on the adjacent property was the best way to address the trace amounts of LA residues found in a relatively-thin, sub-grade horizon beneath a portion of the Ampco Parking Lot.

EPA-contractors mobilized to the site in April 2004 to initiate this Removal, beginning with cleanup of the Artistic Printing Company facility. After cleanup of the print shop was completed, EPA contractors cleaned and cleared the nearby Frank Edwards Building. Fund-lead portions of the Removal were completed in late summer, after the expenditure of approximately 19,000 contractor labor hours.

In early September, PacifiCorp (UPL parent company) began the PRP-lead phase of this Removal action on the 3<sup>rd</sup> West Electrical Substation parcel, pursuant to a EPA-PacifiCorp Administrative Order on Consent (AOC). According to terms of the AOC, the PRP was to clean and clear the substation of LA residues according to clearance standards specified by EPA. At the outset of this activity, EPA and PacifiCorp estimated the volume of LA-associated waste contaminating the substation parcel to be less than 4,000 cubic yards. PRP site excavations, to date, have demonstrated this volume estimate to be a gross under-estimate.

PacifiCorp began parcel excavation chartered to chase (excavate and remove) visible LA residues until the parcel had been thoroughly cleaned. At the outset, PacifiCorp, EPA and DEQ anticipated that the PRP needed to do little-more than 'surface-scrape' the site, to an approximate depth of less than 12 inches, to remove the identified LA residues. However, as excavations continued, the PRP encountered ever-increasing volumes of LA residues at depth, including vermiculite ore, exfoliated product, clinkers, flue and process fines, and LA-contaminated soils and rail ballast. To date, the PRP has excavated and removed over 13,000 cubic yards of LA-contaminated residues from the site, digging, in some areas, to a depth of over 14 feet, mostly in the area directly-adjacent to the Ampco Parking Lot. Excavations continue.

Pursuant to the AOC, the scope of PRP cleanup is limited to cleanup of the substation parcel. When the main pit was opened - along the fence separating the electrical

substation and the Ampco parking lot - 'pockets' of visible vermiculite were identified in various subsurface horizons under the fence, indicating that substantial amounts of LA-contaminated residues extend beyond the boundaries of the substation parcel, past the fence, and under the parking lot.

### III. PROPOSED ACTIONS AND ESTIMATED COSTS

#### A. Removal Actions

Consistent with AOC-specified PRP soil removal actions on the electrical substation parcel, EPA will remove the fence now separating the electrical substation and the Ampco Parking Lot so as to continue excavating LA residues from the Site. The OSC currently estimates that as much as an additional 1,500 cubic yards of LA-contaminated residues and soils may need to be removed from the Site for disposal. After LA residues have been removed from the parking lot parcel, the parking lot will be restored to its' original configuration and the electrical substation fence replaced according to UPL-specified requirements.

#### B. Potential Future Actions

Completion of these additional actions should clear the Site of LA-contaminated residues. Accordingly, we anticipate no future response actions at this Site.

#### C. Estimated Costs

The current and proposed new cost project ceiling estimate for this Removal is shown below:

##### Extramural Costs:

	<u>Current Ceiling</u>	<u>Proposed Changes</u>	<u>Proposed Ceiling</u>
<u>Regional Allowance Costs:</u>			
ERRS/State Licensed ACM Sub-contractor	\$1,014,000	\$ 450,000	\$1,464,000
Transportation & Disposal Costs	\$ 15,000	\$ 45,000	\$ 60,000
Volpe IAG (including sampling contractor)	\$ 702,000	\$ -	\$ 702,000
USCG	\$ 30,000	\$ 15,000	\$ 45,000
Contingency (20%)	\$ 351,600	\$ 102,000	\$ 453,600
<b>TOTAL, EXTRAMURAL COSTS</b>	<b>\$2,112,600</b>	<b>\$ 612,000</b>	<b>\$2,724,600</b>

##### Intramural Costs

EPA's Direct Intramural Costs (10%)	\$ 214,800	\$ 61,200	\$ 276,000
Regional Indirect Cost (35%)	\$ 796,866	\$ 214,200	\$1,011,066
<b>Estimated Total EPA Costs*</b>	<b>\$3,124,266</b>	<b>\$ 887,400</b>	<b>\$4,011,666</b>

\*The total EPA costs for this removal action, to be based on full-cost accounting practices, that will be eligible for cost recovery are estimated to be \$4,011,666. Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of the removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of total costs estimates nor deviation of actual costs from this estimate will affect the United States' right to cost recovery.

#### IV. RECOMMENDATION

This decision document represents the Amended Removal Action for the Vermiculite Intermountain Site, located at 333 West 100 South, Salt Lake City, Utah, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP criteria found at 40 C.F.R. 1 §300.415(b)(2) for a Removal Action, and I recommend your approval. The total project ceiling is estimated to be \$4,011,666 and of this, an estimated \$2,724,600 comes from the Regional removal allowance (\$612,000 from FY 2005).

Approve: Max H. Dodson Date: 11/19/04  
Max H. Dodson  
Assistant Regional Administrator  
Office of Ecosystems Protection  
and Remediation

Disapprove: \_\_\_\_\_ Date: \_\_\_\_\_  
Max H. Dodson  
Assistant Regional Administrator  
Office of Ecosystems Protection  
and Remediation

#### Attachments:

- Attachment A - Action Memorandum dated April 7, 2004
- Attachment B - Action Memorandum dated May 26, 2004

#### SUPPLEMENTAL DOCUMENTS

Support/reference documents which may be helpful to the reader and/or have been cited in the report may be found in the Administrative Record File at the Superfund Records Center for Region VIII EPA, 999 18th Street, Denver, Colorado 80202.



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REGION 8  
999 18<sup>TH</sup> STREET - SUITE 500  
DENVER, CO 80202-2466

Ref: 8EPR-ER

APR -7 2004

**ACTION MEMORANDUM**

SUBJECT: Request for a Time Critical Removal Action Approval at the Vermiculite Intermountain Site, Salt Lake City/County, Utah 84104

FROM: Floyd D. Nichols, On-Scene Coordinator  
Emergency Response Team

A handwritten signature of Floyd D. Nichols in black ink.

FOR  
FLOYD NICHOLS

THROUGH: Steve D. Hawthorn, Supervisor  
Emergency Response Unit

A handwritten signature of Steve D. Hawthorn in black ink.

Douglas M. Skie, Director  
Preparedness, Assessment & Emergency Response Programs

A handwritten signature of Douglas M. Skie in black ink.

TO: Max H. Dodson, Assistant Regional Administrator  
Office of Ecosystems Protection & Remediation

Site ID#: 08GA

Category of Removal: Fund-Lead, Time Critical

**1. PURPOSE**

The purpose of this ACTION MEMORANDUM is to request and document approval of a combined initial Time-Critical Removal Action and a 12-month & \$2 million exemption from the statutory limits for the Removal Action described herein at the Vermiculite Intermountain site (Site), located in Salt Lake City, Utah.

This Removal Action addresses the need to mitigate the threats to the local population and the environment posed by a fibrous form of amphibole asbestos at the Site, including properties adjacent to the former facility. The asbestos was co-mingled with vermiculite ore shipped to the Vermiculite Intermountain facility from a mine near Libby, Montana. In Salt Lake City, the vermiculite ore was "exfoliated" (expanded in a dry furnace) to produce insulation products for the Salt Lake City commercial, wholesale, and retail markets. The exfoliation plant operated at the Site for over four decades. In addition, a variety of vermiculite products were formulated and distributed from the facility.

Conditions existing at the Site present a threat to public health or welfare or the environment and meet the criteria for initiating a Removal Action under 40 CFR, Section 300.415(b)(2) of the National Contingency Plan (NCP). Conditions at the Site meet the emergency criteria for exemption from 12-month and \$2 million statutory limits for a Removal Action.

## **II. SITE CONDITIONS AND BACKGROUND**

The plant was one of many facilities that received vermiculite from a mine near Libby, Montana. The Libby mine produced about 80% of the world's supply of vermiculite at one time and shipped vermiculite concentrate to various locations throughout the United States. The Libby vermiculite was co-mingled with amphibole asbestos of the tremolite-actinolite-richterite-winchite solution series and, as a result, there is asbestos contamination at many of the facilities which received vermiculite concentrate from the Libby mine.

The Vermiculite Intermountain plant, which is located at or near 333 West 100 South, Salt Lake City, Utah, began operation in 1940. According to a 1984 business newspaper article, Lee Irvine was the president of Vermiculite Intermountain, a company licensed by the W. R. Grace company to manufacture insulation products. The 1984 news article also stated that the manufacturing operations were to be moved to a new Salt Lake City location at 733 West 800 South and continue in operation, dba Intermountain Products. At that new location, the plant operated until the business declared bankruptcy in 1987. Invoices obtained from W. R. Grace, which purchased the Libby mine in 1963, show that over 25,000 tons of vermiculite concentrate were shipped to the 333 West 100 South address prior to 1980. EPA has no information at this time whether this is a comprehensive total of Libby vermiculite shipped to this facility.

### **A. Site Description**

#### **1. Physical location**

The Site is located at or near 333 West 100 South, Salt Lake City, Utah.

#### **2. Removal Site Evaluation and Site Characteristics**

The Vermiculite Intermountain facility received vermiculite concentrate from a mine near Libby, Montana, in rail cars. The ore was dumped at the Site and exfoliated in a dry furnace. The exfoliated vermiculite was subsequently distributed to the Salt Lake City-area wholesale and retail markets, with some quantities being sold as insulation material or as a constituent in various products including "Zonolite". The facility also produced other products which involved mixing the concentrate or expanded vermiculite into plaster-like compounds, such as "Monokote".

The former Vermiculite Intermountain (VI) facility (Attachment 1- Facility Area Map), including the furnace and 'smoke stack', was demolished in the 1986 and the servicing rail road bed removed. The Site is now a vacant, graveled, rectangular lot located immediately east of the Utah Power and Light (UPL) 3<sup>rd</sup> West Electrical Substation, and just south of the Salt Lake City's Delta Center (sports) complex. Portions of the VI building foundation are still visible just to the east of the substation's above-ground equipment. The Site is currently owned by the Utah Power and Light Co., a subsidiary of PacifiCorp. Reportedly, PacifiCorp is currently owned by Scottish Power, based in Glasgow, Scotland.

The Site, located generally in the middle of a downtown city block, is currently surrounded on three sides by active commercial establishments and on the 4<sup>th</sup> side by the UPL substation. Precipitation falling on the Site generally infiltrates directly into the ground, through the gravel cap. Any sheet-runoff would be directed to the west, onto the sidewalk and gutter bordering 400 West Street. Surrounding the Site are:

- The Utah Power and Light Substation parcel currently encompasses the Site. The Site is denoted by the old VI building foundation, visible just east of the substation's above-ground hardware. The electrical substation, immediately west of the Site, consists of a 8,800 square foot, 2-story cinder-block storage/switch building surrounded and overtopped by an array of above-ground and elevated transformers, capacitors, breakers, wires, etc. The substation is underlain by a grounding plane at a depth of approximately 18 inches. Power is routed to and from the substation via underground conduits. The entire UPL parcel surface is capped by crushed gravel to an approximate depth of 0-6 inches.

The storage/switch building interior consists primarily of two long rooms. The substation is visited frequently by a limited number of UPL employees as they go about their routine activities. Anecdotal information suggests that a portion of the property is occasionally used for parking by UPL personnel when they attend events at the Delta Center directly across the street.

The Utah Transit Authority has a long-term lease on the northwest corner of the substation parcel for one of its Tractor Power Substation (TPS) units which supports the Salt Lake City Light Rail system. The substation is separated, on the west, from 400 West Street by a block wall.

Vermiculite is visible on the exposed ground surface across the Site - most notably in areas within the VI building footprint. Vermiculite is also visible on the ground surface in other areas of the UPL substation when the overlying gravel cap is scraped away. Analysis of samples collected from on and around the substation parcel (discussed further below) shows presence of

varying amounts of Libby Amphibole (LA) fibers. Analysis of dust samples collected inside the storage/switch building showed very significant amounts of LA fibers.

- The Artistic Printing Company, a small custom print shop, is a few feet to the northwest of the Site and currently separated from the Site by a chain-link fence. The 18,000 sq ft, slab-on-grade building was constructed prior to 1940. The building is currently in daily use by 24 employees working two shifts, 5-days per week.

The building was constructed with block walls and a high, mostly-flat roof. A small, central roof section is pitched so as to accommodate a row of windows above the building's center line. Additional windows, providing light and ventilation, are on all sides of the building.

A company representative stated that, before the installation of evaporative coolers, routine practice was for the building occupants to open all the available windows in the summertime for ventilation and cooling. The representative also provided anecdotal information about periodic fumigation of the building by emissions from the Site smokestack, resulting in deposition of stack particulate matter on the roof and other outside horizontal surfaces and, through the open windows, onto interior horizontal surfaces.

The building interior is subdivided into several large and small work and/or storage rooms. Typically, the large printing and binding units are situated in the middle of the larger rooms, with the ancillary equipment surrounding the units or in adjacent rooms, and the in/out inventory and other supplies kept in areas further removed from the units. The building also encloses an office area (with a low, false ceiling) and an open employee break area near the southeast corner.

Analysis of dust samples collected inside the Artistic Printing facility in 2003 showed significant amounts of LA fibers.

- The LaQuinta Parcel, including the AMPCO (leased) Parking Lot and the Frank Edwards Building, immediately borders the Site on the north and northeast sides and is separated from the Site by a chain link fence. The parking lot, consisting of an asphalt cap on 20 - 36 inches of fill material, is used daily, primarily by individuals visiting or working in downtown Salt Lake City or the (across-the-street) Delta Center. The Frank Edwards Building, a one-story 23,000 square feet structure, is on the northeast corner of the block, approximately 300 feet northeast of and across the parking lot from the Site. Reportedly, the building was last occupied by crew(s) supporting the 2002 Winter Olympics. The building is currently unoccupied, and the building and lot are being marketed by the owner.

Subsurface soil samples were collected below the parking lot surface in late summer 2003, along a line parallel to the Site's eastern fence, offset from the fence by approximately 20 feet. Analysis of those samples showed trace amounts of LA fibers at a depth of 20 - 30 inches below grade at the assumed original ground surface/fill material interface.

Analysis of dust samples collected inside the Frank Edwards Building in December 2003 showed a moderate amount of LA fibers in an office area. Due to a data transcription error, more samples may be performed in the near future.

- The Utah Paper Box Company immediately borders the Site on the south, and is separated from the Site by a chain link fence sitting atop a low retaining wall. Portions of the 57,000 sq. ft., slab-on-grade, elongated building were constructed before 1940. The building is currently in daily use by 60 employees working multi-shifts, 7-days per week.

The building interior is subdivided into several large and small work and/or storage rooms. Typically, the large printing and box-assembly units are situated near the middle of the larger rooms, with the ancillary equipment surrounding the units or in adjacent rooms, and the in/out inventory and other supplies kept in areas further removed from the printing and assembly units. The building also encompasses numerous corporate and business offices as well as planning, drafting, and other, related work stations. Most of the interior office spaces have false ceilings and are individually walled-off from the large work rooms. Currently, there are no windows on the building's north face, the wall facing the Site.

A Company representative offered anecdotal information concerning prior litigation between Utah Paper Box and Vermiculite Intermountain because of repeated VI fumigation of UPB.

Analysis of dust samples collected in various areas inside the Utah Paper Box facility in 2003 failed to detect any LA fibers. Analysis of those samples did show, however, presence of minor amounts of chrysolite.

EPA has conducted several sampling events at the Site and inside the buildings surrounding the Site. Analysis of the samples collected shows the presence of LA fibers in significant concentrations in on- and off-facility soils and in dust collected from within work spaces in businesses adjacent to the Site.

### **3. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant**

Amphibole asbestos is of concern because chronic inhalation of excessive levels of fibers suspended in breathing air can result in lung diseases such as asbestosis,

mesothelioma, and cancer. Subacute exposures to elevated levels for even a few days have been shown to cause mesothelioma.

Amphibole asbestos is a hazardous substance as defined by 40 CFR Section 302.4 (the National Contingency Plan (NCP)). The solid-solution series of tremolite-actinolite-richterite-winchite (referred to in this document as amphibole asbestos) was present in the vermiculite ore shipped from the Libby Mine. Sampling events at the Site have confirmed the presence of amphibole asbestos in concentrate residues, soils, and dust at concentrations of concern. Accordingly, this concentration represents an unacceptable current and on-going future risk to workers at and visitors to the Site and to the general population occupying nearby businesses and/or downtown venues.

Visible vermiculite is present on the ground surface at the Site, and has been identified through scientific analysis at varying depths in Site soils and at various surface and subsurface horizons on adjacent parcels. LA fibers have also been found at varying concentrations inside buildings on adjacent properties. From any of these contaminant sources, LA fibers are likely to become airborne when disturbed by such activities as wind gusts, surface erosion, foot traffic, automobile traffic, and routine business-related and/or maintenance activities. A tornado struck the Site directly about a decade ago. In soil-raking scenarios demonstrated at the VI-successor site, asbestos fibers became airborne into the breathing zone when lightly disturbed: the chain link fence surrounding this Site is not sufficient to prevent offsite dispersion of any suspended fibers. Significant concentrations of LA-contaminated dust are present inside the buildings adjacent to the Site. Renovation to and/or routine maintenance activities conducted in those buildings could result in unacceptable exposures to building workers or visitors during such activities and could also result in a release of LA fibers outside the buildings and into the environment. Accordingly, there is the potential for direct exposure of people to the LA inside those adjacent businesses, as well as a secondary exposure risk to other people, if fibers are tracked out of the buildings and subsequently become airborne.

The Libby NPL Site Administrative Record contains many academic papers discussing the hazards associated with asbestos in general, and Libby-amphibole asbestos in particular. The documents in the Libby NPL Site Administrative Record are incorporated herein by reference.

#### **4. NPL status**

This Site is not being considered for inclusion on the National Priorities List (NPL).

### **B. Other Actions to Date**

#### **1. Previous actions**

There have been no previous CERCLA Removal Actions at this Site. Reportedly, UPL performed limited asbestos abatement on a portion of the Site in 2003.

Results from the EPA 2003 sampling activities showed residual amounts of Libby LA on the Site surface subsequent to the UPL abatement activity.

## **2. Current actions**

There are no other pending Federal or State actions at this Site.

### **C. State and Local Authorities' Roles**

EPA has repeatedly briefed representatives of the Utah Department of Environmental Quality (UDEQ) and other local agencies about the investigation and the sampling events and has consulted with them about the investigation findings and analytical results received to date. In addition, UDEQ representatives have participated in numerous planning meetings and have worked closely with EPA in developing associated Site work, ARARs, and community outreach plans. Neither the State nor local agencies have the resources necessary to independently conduct the needed Site investigations or clean-up.

## **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

### **A. Threats to Public Health or Welfare**

The adverse health effects from exposure to Libby amphibole asbestos have been documented among W.R. Grace workers in Libby, those who have received secondary exposures in Libby (i.e., non-occupational), and others around the country. With respect to the secondary exposures in Libby, the Agency for Toxic Substances and Disease Registry (ATSDR) conducted medical screening of several thousand citizens in Libby and documented the occurrence of significant lung abnormalities among family members of former Grace employees. The ATSDR screening also found significant rates of lung abnormalities among people with "recreational" contact with various vermiculite materials that contain amphibole asbestos. Outside of Libby, there is evidence that Grace workers suffered high rates of asbestos-related disease at various Grace processing plants across the country.

A memorandum from Dr. Aubrey Miller, Senior Region 8 Medical Officer and Toxicologist, regarding the Libby vermiculite and amphibole asbestos, is attached to this Action Memorandum (Attachment 2). Generally, Dr. Miller concludes that the amphibole asbestos found in Libby vermiculite can yield significant amounts of respirable amphibole asbestos fibers. He further concludes that exposure to these fibers has been shown to have pronounced adverse medical consequences, and can present an unacceptable risk to those who may be exposed to LA in even minute quantities.

This information along with the host of other information found in the Libby NPL Site Administrative Record has led the EPA to make the following general conclusions: (1) whenever materials associated with Libby vermiculite can be found there will most likely be associated with it high concentrations of amphibole asbestos; (2) the amphibole asbestos found in the Libby vermiculite is highly toxic; (3) the amphibole asbestos associated with the Libby vermiculite readily produces respirable fibers when disturbed; and, (4) any time when there exists a condition such that there will be people in or around the amphibole asbestos there is a high probability for exposure, and this probability presents an unacceptable risk to public health.

The threat of exposure to workers and visitors to the Vermiculite Intermountain Site, nearby residents, and employees at local businesses exists through the potential inhalation of LA fibers. Therefore, conditions at the Site present an imminent and substantial endangerment to human health and the environment and meet the criteria for initiating a Removal Action under Section 300.415(b)(2) of the NCP. All of the factors from §300.415(b)(2) of the NCP have been considered and the following form the basis for EPA's determination of the threat presented, and the appropriate action to be taken:

- (i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances: The presence of amphibole asbestos found at and around the Site in the soil and dust are a threat to human health. In addition, any disturbance of the ground surface or dust patina can cause LA fibers to become airborne at unacceptable concentrations. Persons routinely occupy or visit potentially contaminated areas for personal or occupational uses. Also, maintenance activities in areas with high concentrations of LA fibers could result in a release to the breathing zone of unacceptable concentrations of amphibole asbestos.

Investigations focused on the Libby vermiculite have shown that exposures to the Libby amphibole may result in asbestos-related diseases and death. Studies by NIOSH researchers at other expansion (exfoliation) plants and at the Libby mine, as well as those sponsored by W. R. Grace, clearly show the deleterious health effects to people who were exposed to the LA fibers. In addition, the Public Health Service and ATSDR are conducting an epidemiological evaluation of certain facilities that processed Libby vermiculite ore, both in Libby and around the country. So far, they have discovered documented medical cases where the primary source of exposure to the LA fibers appears to be in non-occupational settings.

As a result of EPA investigations in Libby, it has now become apparent that direct contact with the Libby ore tends to generate significant airborne fiber concentrations. For example, EPA saw evidence that aggressive sampling of bulk materials, conducted in two Libby homes in December 1999, generated excessive amounts of airborne fibers. Also, given the number of cases of asbestos-related disease and death associated with handling ore from the Libby mine, it is reasonable to conclude that any human exposure to the Libby amphibole asbestos may be an imminent and substantial endangerment to public health and welfare.

- (iv) High levels of hazardous substances in soils largely at or near the surface that may migrate; Contaminated vermiculite is visible on the ground surface at the Site. Through laboratory analysis, Libby amphibole asbestos has been identified in Site surface and near-surface soils, and in dust accumulations inside buildings immediately adjacent to the site. These asbestos fibers can become entrained in the air, possibly resulting in inhalation exposures. In addition, contaminated soils or dust can be released from the Site by automobile or foot traffic, on equipment moved from or around inside businesses located adjacent to the Site, through sheet runoff, or via high winds. In particular, Utah central valley winds, particularly in dry summer months, can lead to the release of fine asbestos fibers from the Site.

Currently EPA has not established under any of its regulatory programs an asbestos level in soil below which an exposure does not pose a risk. The 1% cut-off level for regulation under the Toxic Substances Control Act abatement program was established on the basis of analytical capability at the time, and was not established based on the level of risk represented. To the contrary, at Superfund sites in California, EPA Region 9 found in certain settings that concentrations of asbestos less than 1% posed unacceptable inhalation risks when subjected to disturbance by traffic. EPA's "dust-raising" scenarios at the Vermiculite Intermountain sister site in Salt Lake City demonstrated that airborne fibers easily exceeded the OSHA limits even though bulk samples of soil and vermiculite on the ground surface were well-below the 1% TSCA threshold.

- (vii) The (lack of) availability of other appropriate federal or state mechanisms to respond to the release; No other Local, State, or Federal agency is in the position or has the resources to independently implement an effective response action to address the on-going threats presented at this Site.

#### **B. Threats to the Environment**

To date, the Site investigation has not considered if the asbestos contamination is a threat to animals, water, and other parts of the environment. Asbestos is primarily a human health threat via an inhalation exposure pathway.

### **IV. ENDANGERMENT DETERMINATION**

Asbestos is a generic term for a group of six naturally-occurring fibrous silicate minerals. The predominant fibrous habit of minerals found at the Site are of the tremolite-actinolite solid solution series (referred to in this Action Memorandum as amphibole asbestos). Asbestos can cause asbestosis and is a recognized human carcinogen, causing lung cancer and mesothelioma, a lethal neoplasm of the lining of the chest and abdominal cavities. Cancer of the larynx and esophageal lining has also been associated with exposure to asbestos. Commercial forms of asbestos have been found to be carcinogenic in experimental animals.

There are documented asbestos-related illnesses and deaths in Libby and near those exfoliation facilities around the country which processed Libby vermiculite ore. A number of the Libby victims did not work at any of the vermiculite processing areas, but received their exposures in other, non-work-related ways i. e., workers at the Libby vermiculite plants wore their dusty clothes home, thereby exposing family members. Also, Libby residents reported playing in piles of vermiculite ore and/or exfoliation products as children. The Vermiculite Intermountain facility in Salt Lake City received and processed Libby vermiculite ore for over four decades, and EPA's sampling shows the lingering presence of substantial amounts of Libby amphibole asbestos at and adjacent to the Site.

Actual or threatened releases of asbestos from this Site, as well as current, ongoing human exposure to contaminated dust by people who may come into contact with the material in their normal workplace, if not addressed by implementing the response action selected in this Action Memorandum, present an imminent and substantial endangerment to public health, welfare, and the environment.

## **V. EXEMPTION FROM STATUTORY LIMITS**

### **A. Emergency Exemption:**

Site conditions meet the criteria set forth in CERCLA §104(c)(1)(A) [40 CFR 300.415 (b)(5)(i) of the NCP].

1. There is an immediate threat to the local population posed by the amphibole asbestos released to the environment. Visible vermiculite is present on the ground surface at the Site, and has been identified through scientific analysis at varying depths in Site soils and at various surface and subsurface horizons on adjacent parcels. LA fibers have also been found at varying concentrations inside buildings on adjacent properties. From any of these contaminant sources, LA fibers are likely to become airborne when disturbed by such activities as wind gusts, surface erosion, foot traffic, automobile traffic, and routine business-related and/or maintenance activities. Renovation to and/or routine maintenance activities conducted in the buildings could result in unacceptable exposures to building workers or visitors during such activities and could also result in a release of LA fibers outside the buildings and into the environment. Accordingly, there is the potential for direct exposure of people to the LA inside the adjacent businesses, as well as a secondary exposure risk to other people, if fibers are tracked out of the buildings and subsequently become airborne.

2. Continued response actions are required to prevent, limit, or mitigate an emergency. If the request for a 12-month and \$2 million statutory exemption is not granted, the Removal Action will not be able to proceed to completion. Total costs of the Removal Action are anticipated to exceed \$2 million due to the size of the properties and the extensive amount of soil contamination; and the large amount of excavation and monitoring of landscape restoration may cause the Removal to extend past 12 months.

3. Assistance from other government agencies is not anticipated on a timely basis for these Removal Actions. Neither the State nor the County has the response capabilities or resources to take any actions independently at the Site. No other mitigation actions are expected to occur to abate the threats described in this action memorandum. Consequently, the timely completion of this Removal Action can only be accomplished if this combined Time-Critical Removal Action and 12-month & \$2 million exemption request is approved.

## **VI. PROPOSED ACTIONS AND ESTIMATED COSTS**

### **A. Proposed Actions**

#### **1. Proposed action description**

To mitigate the threat to the public health and welfare or the environment posed by the asbestos present at the Site, this Removal will involve the following:

- a. Excavation and/or removal of approximately 3,900 cubic yards of LA-contaminated soils, dust, and miscellaneous debris from the Site and the surrounding properties, including the storage/switch building, the electrical substation parcel, the Artistic Printing Company facility, and the Frank Edwards Building.
- b. Removal action for the LaQuinta Parking Lot: The LaQuinta-leased parking lot between the Frank Edwards Building and the 3<sup>rd</sup> West Electrical Substation covers approximately 100,000 square feet. As part of this action, additional investigation to characterize probable contamination under the AMPCO parking lot (owned by La Quinta Inns) will be performed. Any contamination found to be a concern will be addressed in a revised action memo; therefore, the cost estimate contained in this memorandum covers only the actions prescribed herein. Currently, direct human contact with an unknown quantity of LA residues on the lot is prevented by the existing asphalt cap and the intervening soil layer. Direct human contact with the LA is prevented as long as the integrity of this cap/soil overburden layer remains intact. However, if this cap/soil overburden layer is disturbed to the extent that LA becomes exposed on the surface, direct human exposure to LA becomes likely. Accordingly, controls (i.e., Institutional Controls, deed restrictions, zoning restrictions, etc.) should be placed such that continuing integrity of the cap/soil overburden layer can be assured. If the current lot owner, or any future owner, contemplates development of this lot (i.e., excavation for new construction), LA removal and disposal, followed by aggressive site clearance, shall be accomplished concurrent with the new site redevelopment actions.

As there are no current known plans for lot excavation, redevelopment, etc., EPA's current Removal Action for this Site does not include cleanup actions on this parking lot. However, if or when such plans become known, EPA will prioritize and schedule the appropriate action(s) to address any remaining LA contamination under the parking lot.

- d. Except as noted in §(V)(A)(1)(b) [above] comprehensive clearance sampling, followed by disposal of the dust and miscellaneous debris removed from the Site and from buildings immediately adjacent to the Site.
- e. Decontamination, transportation, and/or disposal of related waste material.
- f. Property restoration, including placement of backfill, topsoil, and compaction.

## **2. Contribution to remedial performance**

This Removal Action will be a final cleanup. No additional action will be required unless new contaminated areas are discovered in the future. All contaminated areas will be excavated as a cost-effective and efficient means to avoid any future investigations or re-mobilizing for cleanup.

## **3. Description of alternative technologies**

No alternative technologies were found to be appropriate given the nature of the asbestos contamination, the physical location and scope of the project, and its time critical nature. If in the course of this or any subsequent removal actions at the Site, any alternative remediation technologies are identified that will enhance response actions, they will be considered, as appropriate.

## **4. EE/CA**

This is a Time-Critical Removal Action; thus, an EE/CA is not required.

## **5. Applicable or relevant and appropriate requirements**

As this Action is being conducted as a Time Critical Removal Action, all Federal and State ARARs may not have been identified at this time. The ARARs identified to date are provided as Attachment 3. In accordance with the NCP, all ARARs for the Site will be attained to the extent practicable, given the scope of the project and the urgency of the situation as they are identified.

Many of the ARARS identified for these Removal Actions come from the Clean Air Act National Emission Standards for Hazardous Pollutants (NESHAPS) for asbestos. These regulations were designed specifically for renovation and

demolition of buildings with asbestos containing material (ACM) such as floor tile, ceiling tile and pipe wrapping. The regulations were not designed for loose fill vermiculite insulation, piles of unexpanded vermiculite, contaminated soils or heavily contaminated dust. As such, it is anticipated that it may not be practicable to achieve all ARARS during this Removal Action because the regulations contemplate removing all asbestos prior to renovation or other activities.

## 6. Project Schedule

It is anticipated that the Removal Action will commence in early Spring 2004 and monitoring of landscape restoration can be completed by Summer of 2005.

### B. Estimated Costs

#### EXTRAMURAL COSTS:

ERRS Personnel & Equipment	\$ 664,000
Transportation & Disposal	15,000
Volpe IAG (including Sampling Contractor)	689,000
20% Contingency	<u>273,600</u>

TOTAL EXTRAMURAL COSTS \$1,641,600

#### INTRAMURAL COSTS:

Intramural Direct Costs (10%) \$ 164,160

TOTAL EXTRAMURAL + INTRAMURAL \$1,805,760

Indirect Costs (35%) \$ 632,016

**TOTAL ESTIMATED EPA COSTS FOR REMOVAL ACTION \$2,437,776**

The total EPA costs for this removal action, to be based on full-cost accounting practices, that will be eligible for cost recovery are estimated to be \$2,437,776. Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of the removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of total costs estimates nor deviation of actual costs from this estimate will affect the United States' right to cost recovery.

## **VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

Delayed action will increase public health risks to the local population/environment posed by airborne asbestos fibers.

## **VIII. OUTSTANDING POLICY ISSUES**

The Removal Action described in this Action Memorandum does not raise any fundamental response issues, nor does it set any broader policy precedent or constitute a nationally significant issue relating to vermiculite insulation. Asbestos removals have been completed in Region 8, and around the country at numerous removal sites which were initiated under Section 300.415 of the NCP and in compliance with NESHAPS regulation under 40 CFR Section 61.150. This removal does not set a precedent or constitute a nationally significant issue.

## **IX. ENFORCEMENT**


A separate addendum will provide a confidential summary of current and potential future enforcement actions.

## **X. RECOMMENDATION**

This decision document represents the selected Removal Action for the Vermiculite Intermountain site, Salt Lake City, Utah, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

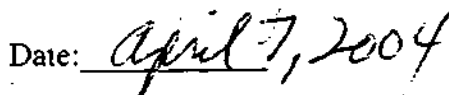
Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a Removal, and I recommend your approval of the proposed removal action. The total project ceiling will be \$2,437,776. Of this, an estimated \$1,805,760 comes from the Regional removal allowance.

Approve:



Max H. Dodson  
Assistant Regional Administrator  
Office of Ecosystems Protection  
and Remediation

Date:



**Disapprove:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Max H. Dodson  
Assistant Regional Administrator  
Office of Ecosystems Protection  
and Remediation

**Attachments:**

Attachment 1 - Facility Area Map  
Attachment 2 - Toxicologist Memorandum  
Attachment 3 - Applicable or Relevant & Appropriate Requirements

**SUPPLEMENTAL DOCUMENTS**

Support/reference documents which may be helpful to the reader and/or have been cited in the report may be found in the Administrative Record Files for the Vermiculite Intermountain site at the Superfund Records Center for Region VIII EPA, 999 18th Street, Denver, Colorado 80202.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 8**

**999 18<sup>TH</sup> STREET - SUITE 300**

**DENVER, CO 80202-2466**

**Phone 800-227-8917**

**<http://www.epa.gov/region08>**

**MAY 26 2004**

Ref: EPR-ER

**ACTION MEMORANDUM AMENDMENT**

**SUBJECT:** Request for an Amendment to a Time Critical Removal Action at the Vermiculite Intermountain Site, Salt Lake City/County, Utah.

**FROM:** Floyd Nichols, On-Scene Coordinator  
Emergency Response Team

*Mike Zimmerman*

**THROUGH:** Steve D. Hawthorn, Team Supervisor  
Emergency Response Unit

*Mike Zimmerman*

*for* Douglas M. Skie, Director  
Preparedness, Assessment & Emergency Response Programs

*[Signature]*

**TO:** Max H. Dodson, Assistant Regional Administrator  
Office of Ecosystems Protection & Remediation

**Site ID#:** 08GA

**Category of Removal:** Time Critical, Fund-Lead

**I. PURPOSE**

The purpose of this ACTION MEMORANDUM AMENDMENT is to request an increase in the ceiling for the Removal Action at the Vermiculite Intermountain site (Site) located in Salt Lake City/County, Utah. The original Action Memorandum was signed on April 7, 2004, and included a 12-month & \$2 million exemption from the statutory limits (See Attachment A).

In the process of finding and removing the Libby Amphibole (asbestos) contamination at the Site, the U.S. Environmental Protection Agency (EPA) Region VIII faces several problems, the solution to which will prompt an increase in the total Removal costs:

- ▶ The Frank Edwards Building has more asbestos contamination within the building than was originally identified. Removal of this added amount of asbestos will result in additional costs for labor, equipment, and transportation/disposal.
- ▶ Completing the asbestos abatement within the Artistic Printing Company and the detailed cleaning of the large, multi-colored presses & ancillary equipment has prompted a significant increase in the estimate of labor hours required and a change in equipment that is being used to support the abatement.



## **II. SITE CONDITIONS AND BACKGROUND**

The Site is located near 333 West 100 South, Salt Lake City, Utah. EPA has conducted several sampling events at or around the Site and inside the buildings surrounding the Site. Analysis of the samples showed the presence of Libby Amphibole (LA) asbestos fibers in significant concentrations in on- and off-Site soils and in dust collected from within various building interior work spaces and on equipment units inside buildings that are adjacent to the Site. Original work projections for the Site included excavation and/or removal of approximately 3,900 cubic yards of LA-contaminated dust, soils, and miscellaneous debris from the Site and surrounding properties, including the storage/switch building, the electrical substation parcel, the Artistic Printing Company Facility, the Frank Edwards Building, and Parking Lot (See Attachment 1 - Action Memorandum dated April 7, 2004 for additional information).

## **III. PROPOSED ACTIONS AND ESTIMATED COSTS**

### **A. Removal Actions**

On April 14, 2004, EPA initiated the proposed actions listed in Attachment 1. Activities requiring the additional funds requested in this amendment are summarized below:

#### **Artistic Printing**

Ambient air samples, personal air samples, and dust samples were collected throughout the facility, with LA being detected in all dust and one ambient air sample. As EPA mobilized to the site, Artistic Printing continued daily operations, 5-days-per-week. EPA crews entered the facility at the end of the Company's workday - and accomplished various containment, abatement, and clearance activities throughout the night. On Thursday, May 20, the business shut down and the Time Critical Removal Action (TCRA) continued on a 24-hour-per-day basis thereafter. At that time approximately 35% of the building interior had been cleared of LA residue.

To enhance the efficiency of cleanup inside Artistic Printing, Emergency and Rapid Response (ERRS) mobilized specialized vacuum equipment from Libby, Montana. (Current plans call for subsequent use of this equipment during abatement activities inside the Frank Edwards Building, as well as at a "follow-on fund-lead TCRA" at another "Libby Sister" site which is only a few blocks away.) In addition, sufficient cleaning of the large, intricate equipment utilized by Artistic Printing is requiring substantially more labor hours than originally anticipated.

#### **Frank Edwards Building (owned by La Quinta Corporation)**

Dust samples collected inside the vacant building showed LA contamination in two of the three cavernous rooms. Additional interior samples were collected to further delineate the interior spaces to be included in the pending fund - lead TCRA. Interior isolation and

containment walls have been partially erected. Additional work inside the building awaits successful clearance sampling inside Artistic Printing.

Completion of recent extent-of-contamination investigations inside the two large rooms prompted an increase of estimates for equipment and labor hours needed to complete the necessary cleanup and clearance activities.

## B. Potential Future Actions

EPA continues to take ambient and personal air samples at the Site. In addition to the potential additional and/or changes in activities listed above for the Artistic and Franklin Buildings, future activities by the TCRA include:

### AMPCO Parking Lot (owned by LaQuinta Corporation)

Core samples showed trace amounts of LA at a depth of 32" to 38" below the surface of the parking lot. Additional sub-surface samples have been collected to further define the contamination, scheduling of the TCRA for cleanup of the parking lot is pending.

### PacifiCorp (parent company is Utah Power and Light)

EPA and PacifiCorp continue negotiating toward an Administrative Order on Consent for the cleanup of the UP&L substation parcel. Projected mobilization date for PacifiCorp's action is July of 2004.

## C. Estimated Costs

Cost Estimate: A table containing the original and proposed cost estimates for the Amendment to the Removal project ceiling is shown below:

### Extramural Costs:

	<u>Current Ceiling</u>	<u>Proposed Changes</u>	<u>Proposed Ceiling</u>
<u>Regional Allowance Costs:</u>			
ERRS/State Licensed ACM Sub-contractor	\$ 664,000	\$350,000	\$1,014,000
Transportation & Disposal Costs	\$ 15,000	\$	\$ 15,000
Volpe IAG (including sampling contractor)	\$ 689,000	\$ 13,000	\$ 702,000
USCG		\$ 30,000	\$ 30,000
Contingency (20%)	<u>\$ 273,600</u>	<u>\$ 78,000</u>	<u>\$ 351,600</u>
<b>TOTAL, EXTRAMURAL COSTS</b>	<b>\$1,641,600</b>	<b>\$471,000</b>	<b>\$2,112,600</b>

### Intramural Costs

EPA's Direct Intramural Costs	\$ 164,160	\$ 50,640	\$ 214,800
Regional Indirect Cost (35%)	<u>\$ 632,016</u>	<u>\$164,850</u>	<u>\$ 796,866</u>
<b>Estimated Total EPA Costs*</b>	<b>\$2,437,776</b>	<b>\$686,490</b>	<b>\$3,124,266</b>


\*The total EPA costs for this removal action, to be based on full-cost accounting practices, that will be eligible for cost recovery are estimated to be \$3,189,780. Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of the removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of total costs estimates nor deviation of actual costs from this estimate will affect the United States' right to cost recovery.

#### IV. RECOMMENDATION

This decision document represents the Amended Removal Action for the Vermiculite Intermountain Site, located at 333 West 100 South, Salt Lake City, Utah, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP criteria found at 40 C.F.R. 1 §300.415(b)(2) for a Removal Action, and I recommend your approval. The total project ceiling is estimated to be \$3,189,780 and of this, an estimated \$2,148,000 comes from the Regional removal allowance.

Approve: \_\_\_\_\_

  
Max H. Dodson  
Assistant Regional Administrator  
Office of Ecosystems Protection  
and Remediation

Date: \_\_\_\_\_

5/24/04

Disapprove: \_\_\_\_\_

Max H. Dodson  
Assistant Regional Administrator  
Office of Ecosystems Protection  
and Remediation

Date: \_\_\_\_\_

#### Attachments:

Attachment A - Action Memorandum dated April 7, 2004

#### SUPPLEMENTAL DOCUMENTS

Support/reference documents which may be helpful to the reader and/or have been cited in the report may be found in the Administrative Record File at the Superfund Records Center for Region VIII EPA, 999 18th Street, Denver, Colorado 80202.